Application No. 09/392,842 Amendment dated May 26, 2006 in response to Office Action of February 27, 2006

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1-57. (Canceled)

58. (Currently Amended) A method for providing antimicrobial activity on skin, the method comprising the steps of:

administering to skin a composition comprising a biguanide polymer, an antimicrobial metallic material which is substantially water-insoluble or can be rendered substantially water-insoluble by chemical reaction with an alkali halide, and a carrier selected from the group consisting of a cream, a lotion, a deodorant, a spray, a gel, a wax, an oil, an ointment, a soap, and an alcohol, and

forming a moisture-resistant film on the skin, thereby imparting a persistent antimicrobial activity on the skin.

59. (Canceled)

- 60. (Previously presented) The method of claim 58, wherein the biguanide polymer comprises poly(hexamethylenebiguanide), poly(hexamethylenebiguanide) hydrochloride, poly(hexamethylenebiguanide) gluconate, poly(hexamethylene-biguanide) stearate, or a derivative thereof.
 - 61. (Canceled)
- 62. (Previously presented) The method of claim 58, wherein the metallic material is silver or a silver compound.
- 63. (Previously presented) The method of claim 62, wherein the metallic material is silver nitrate.

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64. (Currently Amended) The method of claim 63, claim 62, wherein the metallic material is silver iodide.

- 65. (Previously presented) The method of claim 58, wherein the biguanide polymer is present as an adduct with a substantially water-insoluble organic compound.
- 66. (Original) The method of claim 65, wherein the substantially water-insoluble organic compound comprises a reactive member selected from the group consisting of carbodiimide, isocyanate, isothiocyanate, succimidyl ester, epoxide, carboxylic acid, acid chloride, acid halide, acid anhydride, succimidyl ether, aldehyde, ketone, sulfonyl chloride, sulfonyl halide, alkyl methane sulfonate, alkyl trifluoromethane sulfonate, alkyl paratoluene methane sulfonate and alkyl halide.
- 67. (Original) The method of claim 65, wherein the substantially water-insoluble organic compound is an epoxide selected from the group consisting of methylene-bis-N,N-diglycidylaniline, bisphenol-A-epichlorohydrin and N,N-diglycidyl-4-glycidyloxyaniline.
- 68. (Previously presented) The method of claim 58, wherein the biguanide polymer comprises a chemical group capable of forming a covalent bond.
- 69. (Original) The method of claim 68, wherein the covalent bond can be generated at room temperature.
- 70. (Original) The method of claim 68, wherein the chemical group is selected from the group consisting of an amino group, a carboxylic acid group, a hydroxyl group, or a sulfhydryl group.

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71. (Original) The method of claim 68, wherein the chemical group is selected from the group consisting of carbodiimide, isocyanate, isothiocyanate, succimidyl ester, epoxide, carboxylic acid, acid chloride, acid halide, acid anhydride, succimidyl ether, aldehyde, ketone, sulfonyl chloride, sulfonyl halide, alkyl methane sulfonate, alkyl trifluoromethane sulfonate, alkyl paratoluene methane sulfonate and alkyl halide.

72-88. (canceled)

89. (Currently Amended) A method for providing antimicrobial activity on skin, the method comprising the steps of:

administering to skin a composition comprising (i) an organic polycationic polymer; (ii) an antimicrobial metallic material which is substantially water-insoluble or can be rendered substantially water-insoluble by chemical reaction with an alkali halide, and (iii) a carrier selected from the group consisting of a cream, a lotion, a deodorant, a spray, a gel, a wax, an oil, an ointment, a soap, and an alcohol or a skin-compatible component selected from the group consisting of emollients, thickeners, humectants, skin moisturizing agents, and surfactants, and

forming a moisture-resistant film on the skin, thereby imparting a persistent antimicrobial activity on the skin.

90. (Canceled)

- 91. (Currently Amended) The method of claim 90-110, wherein the biguanide polymer is present as an adduct with a substantially water-insoluble organic compound.
- 92. (Currently Amended) A method for providing antimicrobial activity on skin, the method comprising the steps of:

administering to skin a composition comprising, in a dermal antiseptic formulation, an organic polycationic polymer and an antimicrobial metallic material which is substantially water or can be rendered substantially water-insoluble by chemical reaction with an alkali halide, and

forming a moisture-resistant film on the skin, thereby imparting a persistent antimicrobial activity on the skin,

wherein the dermal antiseptic formulation is selected from the group consisting of surgical scrub formulations, pre-operative skin preparations, healthcare personnel handwashes, antiseptic handwashes, antimicrobial soaps, antimicrobial creams, antimicrobial hand sanitizers, antimicrobial deodorants, antimicrobial lotions, and antimicrobial gels.

93. (Currently Amended) A method for providing antimicrobial activity on skin, the method comprising the steps of:

administering to skin a composition comprising a biguanide polymer, an antimicrobial metallic material which is substantially water-insoluble or can be rendered substantially water-insoluble by chemical reaction with an alkali halide, and a skin-compatible component selected from the group consisting of emollients, thickeners, humectants, skin moisturizing agents, and surfactants, and

forming a moisture-resistant film on the skin, thereby imparting a persistent antimicrobial activity on the skin.

94. (Previously Presented) The method of claim 93, wherein the biguanide polymer is present as an adduct with a substantially water-insoluble organic compound.

95. (Canceled)

96. (Currently Amended) A method for providing antimicrobial activity on skin, the method comprising the steps of:

administering to skin, by spreading or immersion, a composition comprising a biguanide polymer, an antimicrobial metallic material which is substantially water-insoluble or can be rendered substantially water-insoluble by chemical reaction with an alkali halide, and

forming a moisture-resistant film on the skin, thereby imparting a persistent antimicrobial activity on the skin.

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97. (Previously Presented) The method of claim 96, wherein the biguanide polymer is

present as an adduct with a substantially water-insoluble organic compound.

98. (Currently Amended) A method for providing antimicrobial activity on skin, the

method comprising the steps of:

administering to skin, by spreading or immersion, a composition comprising an

organic polycationic polymer and an antimicrobial metallic material which is substantially water-

insoluble or can be rendered substantially water-insoluble by chemical reaction with an alkali

halide, and

forming a moisture-resistant film on the skin, thereby imparting a persistent

antimicrobial activity on the skin.

99. (Previously presented) The method of claim 58, wherein the film is sweat-resistant.

100. (Previously presented) The method of claim 58, wherein the film does not leach

into a contacting aqueous solution.

101. (Previously presented) The method of claim 58, wherein the metallic material is

selected from the group consisting of a metal, a metal salt, a metal complex, a metal alloy, and

combinations thereof.

102. (Previously Presented) The method of claim 58, wherein the metallic material

binds to cellular proteins of microorganisms and is toxic to microorganisms.

103. (New) A method for providing antimicrobial activity on skin, the method

comprising the steps of:

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administering to skin a composition comprising a biguanide polymer; an antimicrobial metallic material which is substantially water-insoluble or can be rendered substantially water-insoluble, wherein the metallic material comprises a metal selected from the group consisting of a silver, zinc, cadmium, lead, mercury, antimony, gold, aluminum, copper, platinum, and palladium; and a carrier selected from the group consisting of a cream, a lotion, a deodorant, a spray, a gel, a wax, an oil, an ointment, a soap, and an alcohol, and

forming a moisture-resistant film on the skin, thereby imparting a persistent antimicrobial activity on the skin.

- 104. (New) The method of claim 103, wherein the biguanide polymer is present as an adduct with a substantially water-insoluble organic compound.
- 105. (New) A method for providing antimicrobial activity on skin, the method comprising the steps of:

administering to skin a composition comprising

- (i) an organic polycationic polymer;
- (ii) an antimicrobial metallic material which is substantially water-insoluble or can be rendered substantially water-insoluble, wherein the metallic material comprises a metal selected from the group consisting of a silver, zinc, cadmium, lead, mercury, antimony, gold, aluminum, copper, platinum, and palladium; and
- (iii) a carrier selected from the group consisting of a cream, a lotion, a deodorant, a spray, a gel, a wax, an oil, an ointment, a soap, and an alcohol, or a skin-compatible component selected from the group consisting of emollients, thickeners, humectants, skin moisturizing agents, and surfactants, and

forming a moisture-resistant film on the skin, thereby imparting a persistent antimicrobial activity on the skin.

106. (New) The method of claim 105, wherein the organic polycationic polymer is a biguanide polymer.

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107. (New) The method of claim 105, wherein the biguanide polymer is present as an adduct with a substantially water-insoluble organic compound.

- 108. (New) The method of claim 105, wherein the administering is done by spreading or immersion.
- 109. (New) The method of claim 105, wherein the formulation is dermal antiseptic formulation selected from the group consisting of surgical scrub formulations, pre-operative skin preparations, healthcare personnel handwashes, antiseptic handwashes, antimicrobial soaps, antimicrobial creams, antimicrobial hand sanitizers, antimicrobial deodorants, antimicrobial lotions, and antimicrobial gels.
- 110. (New) The method of claim 92 wherein the organic polycationic polymer is a biguanide polymer.
- 111. (New) The method of claim 103, wherein the biguanide polymer comprises poly(hexamethylenebiguanide), poly(hexamethylenebiguanide) hydrochloride, poly(hexamethylenebiguanide) gluconate, poly(hexamethylene-biguanide) stearate, or a derivative thereof.
- 112. (New) The method of claim 103, wherein the metallic material is silver or a silver compound.
 - 113. (New) The method of claim 112, wherein the metallic material is silver nitrate.
 - 114. (New) The method of claim 112, wherein the metallic material is silver iodide.
- 115. (New) The method of claim 104, wherein the substantially water-insoluble organic compound comprises a reactive member selected from the group consisting of

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carbodiimide, isocyanate, isothiocyanate, succimidyl ester, epoxide, carboxylic acid, acid chloride, acid halide, acid anhydride, succimidyl ether, aldehyde, ketone, sulfonyl chloride, sulfonyl halide, alkyl methane sulfonate, alkyl trifluoromethane sulfonate, alkyl paratoluene methane sulfonate and alkyl halide.

- 116. (New) The method of claim 104, wherein the substantially water-insoluble organic compound is an epoxide selected from the group consisting of methylene-bis-N,N-diglycidylaniline, bisphenol-A-epichlorohydrin and N,N-diglycidyl-4-glycidyloxyaniline.
- 117. (New) The method of claim 103, wherein the biguanide polymer comprises a chemical group capable of forming a covalent bond.
- 118. (New) The method of claim 117, wherein the covalent bond can be generated at room temperature.
- 119. (New) The method of claim 117, wherein the chemical group is selected from the group consisting of an amino group, a carboxylic acid group, a hydroxyl group, or a sulfhydryl group.
- 120. (New) The method of claim 117, wherein the chemical group is selected from the group consisting of carbodiimide, isocyanate, isothiocyanate, succimidyl ester, epoxide, carboxylic acid, acid chloride, acid halide, acid anhydride, succimidyl ether, aldehyde, ketone, sulfonyl chloride, sulfonyl halide, alkyl methane sulfonate, alkyl trifluoromethane sulfonate, alkyl paratoluene methane sulfonate and alkyl halide.
 - 121. (New) The method of claim 103, wherein the film is sweat-resistant.
- 122. (New) The method of claim 103, wherein the film does not leach into a contacting aqueous solution.

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123. (New) The method of claim 103, wherein the metallic material comprises a metal selected from the group consisting of a silver, zinc, cadmium, lead, mercury, antimony, gold, aluminum, copper, platinum, and palladium, and is a metal, a metal salt, a metal complex, a metal alloy, or combinations thereof.

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124. (New) The method of claim 103, wherein the metallic material binds to cellular proteins of microorganisms and is toxic to microorganisms.